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# *Live-Virtual-Constructive Accomplishments and Challenges: A Corporate View*

ITEA Live-Virtual-Constructive Conference

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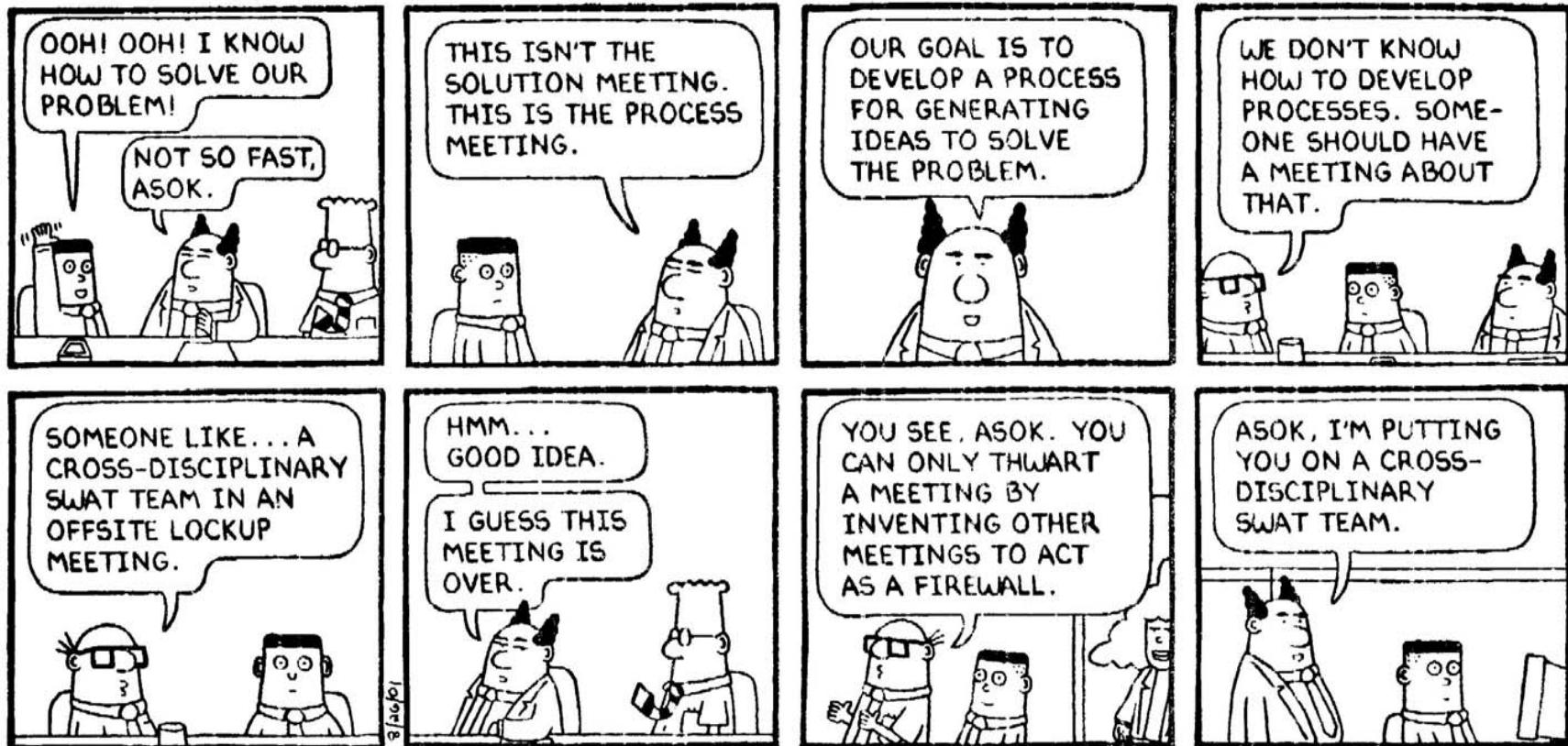
*Director*

*Test Resource Management Center  
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# Problem Solving 101





# Overview

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- A Corporate View
- Joint Mission Environment Test Capability (JMETC) Progress
- Joint Infrastructure Enterprise Initiative (JIEI), and resulting Actions
- The Next Focus for LVC



# A Corporate View

- From the DEPSECDEF Memo, August 9, 2007: DoD's Top 25 Transformation Priorities
  - *Transform Enterprise Management*
    - *Establish a new strategic planning process to include an improved process for prioritizing and aligning resources to joint capability demands.....*
- National Defense Strategy (NDS), June 2008
  - *It is the Department's capstone document, addressing how the US Armed Forces will fight and win America's wars; describes overarching goals and strategy.*
  - *Objective 4: Win Our Nation's Wars*
    - *"The Department must be positioned to defeat enemies employing a combination of capabilities..."*
- Budget Information and Plans are Open Information
  - *DoD leadership affirms that all stakeholders are entitled access to the current state of the budget and must be informed of changes which are likely or are under consideration. We All Work For One Enterprise.*



# Joint Mission Environment Test Capability (JMETC) FY08 Accomplishments



## JMETC FY08 Customers

- Future Combat System (FCS) CTO
- Joint T&E Methodology (JTEM) JT&E
- InterTEC
- Single Integrated Air Picture (SIAP) JPO
- AF Datalink Studies

## JMETC FY08 Accomplishments

- Expanded network from 8 sites to 32 sites
- Supported multiple tests simultaneously
- Realized reuse from persistent agreements
  - 51 times avoided the cost of re-doing site connection paperwork
- Characterized JMETC network performance (latency, throughput) in detail
- Enhanced the JMETC toolbox with test tools for OTH-G and USMTF message protocols

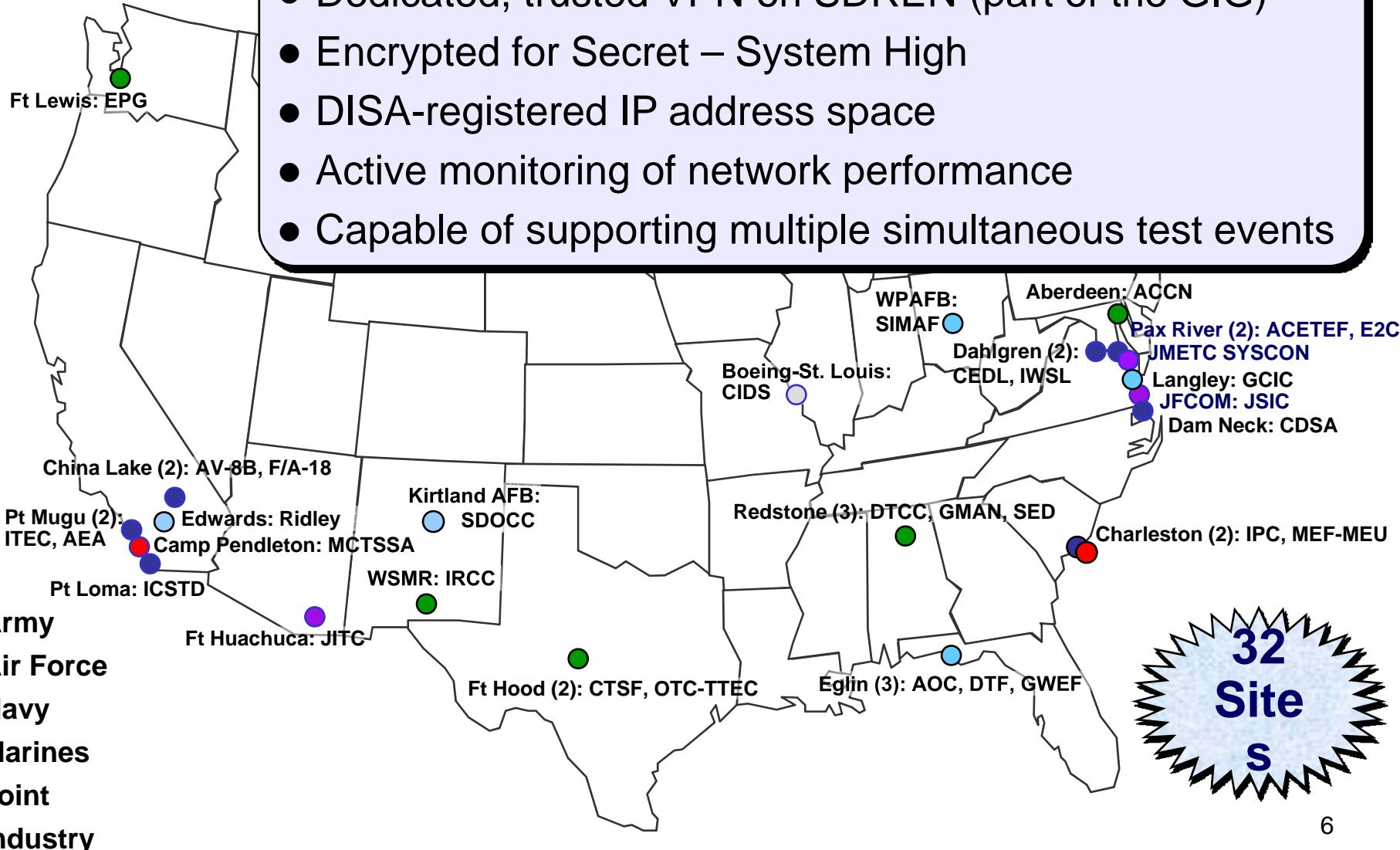
## Insight Gained by the DoD

- Timeliness of C2 processes
  - Joint Fires
  - Joint Close Air Support
  - Combat ID
- Airspace deconfliction studies
- Battlespace management between Army and Air Force
- Link-16 implementation differences between Navy and Air Force
- Improvements to Combat Airborne Networking gained from using FAST over Link-16
- Operational Test Assessment of the Capability Test Methodology
- Suitability of FCS test resources to support FCS Milestone C decision
- Suitability of test strategy for SIAP integration software



# Current JMETC Connectivity

- Dedicated, trusted VPN on SDREN (part of the GIG)
- Encrypted for Secret – System High
- DISA-registered IP address space
- Active monitoring of network performance
- Capable of supporting multiple simultaneous test events





# JMETC Plans for FY09

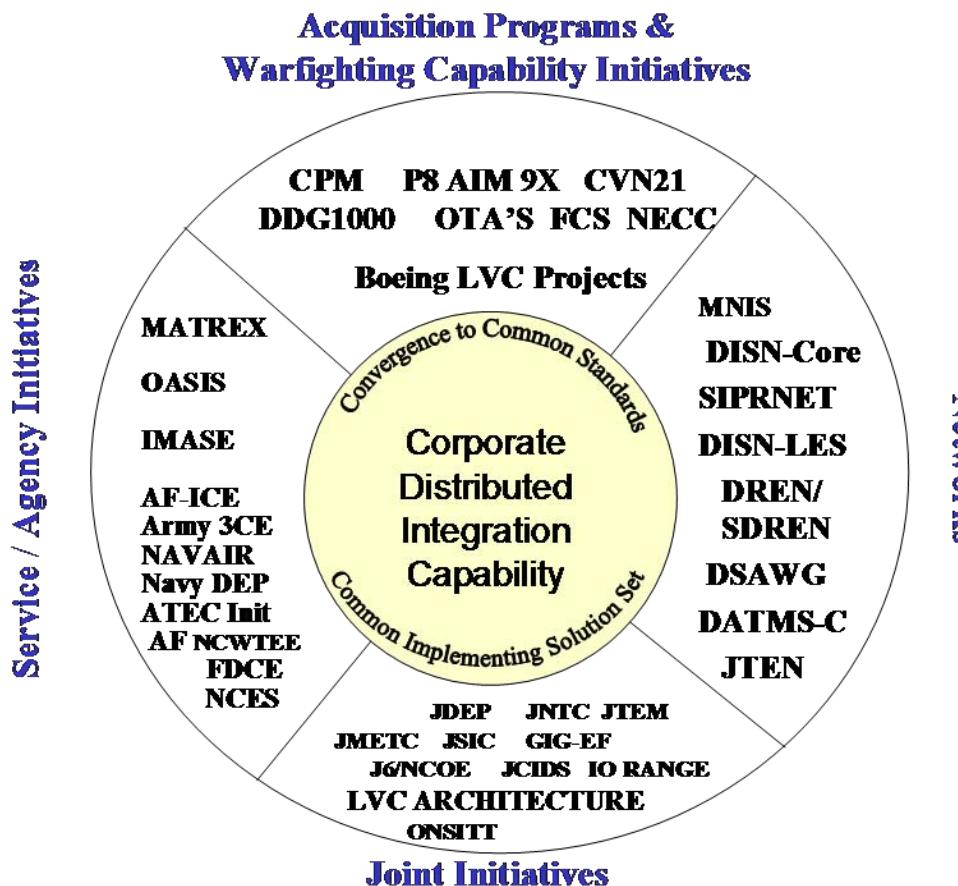
- **Enhance JMETC Capabilities**
  - Expand from 32 sites to 41 sites
  - Upgrade JMETC tools to the new version of TENA (TENA 6.0)
  - Populate the JMETC Reuse Repository with LVC lessons learned
  - Refine JMETC processes and procedures
  - Investigate west coast aggregation router to improve network connectivity with training community
- **Support JMETC FY09 Customers**
  - Persistent Fire 09-01
  - SIAP Joint Combined Hardware-in-the-Loop Event #5 (JCHE-5)
  - JEFX 09-02 and JEFX 09-03
  - Joint Surface Warfare JCTD
- **Coordinate plans for JMETC FY10 Customers**
  - Joint Improvised Explosive Devices Defeat Office (JIEDDO)
  - UAS Airspace Integration Joint IPT UAS in a National Airspace Testbed
  - JTEM OT&E Pilot Test
  - B-2 Interoperability
  - Air/Ground Integrated Layer Exploration (AGILE)
  - InterTEC Spiral 3



# Joint Infrastructure Enterprise Initiative

- **Purpose:** Foster collaboration among DoD organizations involved in creating or supporting distributed Live, Virtual, Constructive (L-V-C) environments
- **Objectives:**
  - Exchange information on DoD initiatives to integrate distributed LVC capabilities
  - Identify common challenges
    - Governance
    - Technical
    - Business Models

*Nine meetings held between  
Feb 2006 - Jan 2008*





# Life After the JIEI

- **The Testing in a Joint Environment Senior Steering Group (TSSG) was chartered on October 26, 2007.**
  - A formal governance body to oversee the implementation of the DoD Testing in a Joint Environment Roadmap.
  - Collaborate on other Department and Component T&E related efforts.
  - Convolved the JMETC Program Senior Advisory Group and the Joint Test and Evaluation Methodology (JTEM) Project General Officer Steering Committee.
- **TSSG received a briefing on March 26, 2008 on the results of the JIEI forums, including a laydown of the common challenges identified.**
- **The TSSG agreed to include the Top 5 JIEI Challenges in its Action Plan.**



# Top Five Common Challenges Identified by JIEI

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1. JCIDS Process
2. Cross Domain Solutions (MLS, MILS, MNIS)
3. Defense Information Assurance Certification and Accreditation Process (DIACAP) Implementation
4. Funding Policy for Using LVC Capabilities Across Test and Training Communities
5. Investment Process for Upgrading LVC Capabilities Across Test and Training Communities



# Top 5 Issues in Detail

## 1. JCIDS Process

### Issue:

Many acquisition programs do not have well understood Joint test requirements

Test strategies for the Net-Ready KPP differ across acquisition programs

TEMPs do not directly call out distributed test requirements

### Need:

Joint requirements clearly defined during the JCIDS process

Test strategies (including distributed test plans) addressing Joint requirements clearly documented in TEMPs

### Suggested Approach:

Review JCIDS process in defining joint requirements that are clear and testable

Improve TEMP formats for Joint test

Review all TEMPs to ensure Joint test requirements are documented and adequately addressed

Track status of TEMPs with Joint test requirements

## 2. Cross Domain Solutions (MLS, MILS, MNIS)

### Issue:

Limited set of approved devices to bridge networks transmitting data at different classification levels

Time-consuming and costly process to obtain approval for "trusted" devices

Lack of timely, cost-efficient processes for the approval of Cross Domain implementations for Joint test or training events

### Need:

A well-defined, streamlined approval process for trusted devices

A configurable "trusted" device usable by all Services and communities

### Suggested Approach:

Document use cases describing cross domain needs

Review status of existing approved cross domain solutions

Review process to approve new cross domain solutions

## 3. DIACAP Implementation

### Issue:

DIACAP for RDT&E systems is time-consuming and overly constrained

Organizations are not transitioning from DITSCAP to DIACAP in an uniformed manner

Organizations are implementing DIACAP differently

### Need:

Streamlined DIACAP approval for RDT&E systems

Automated means of sharing DIACAP C&A products among Services

### Suggested Approach:

Review implementation of DIACAP in each Service (including their approach to RDT&E systems)

Review automated system used by each Service and investigate ways to integrate solutions so C&A products are shared



# DIACAP Tiger Team

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- Establishing community Tiger Team
  - Kickoff meeting planned for February 2009
  - Comprised of Service reps with NII Subject Matter Expert (SME)
  - Identify issues/impacts with current DIACAP implementation
  - Recommend possible solutions and way forward
- Identify representative use cases that characterize the challenges of the current implementation of DIACAP
- Identify recommendations to improve DIACAP policy and/or the implementation of DIACAP in the Services



# Top 5 Issues in Detail (Continued)

## 4. Funding Policy for Using LVC Capabilities Across Test & Training

### Issue:

The business model between the test and training communities differ

### Need:

A policy or well-defined procedures to enable the use of an LVC capability resident in one community (test or training) to the other community

### Suggested Approach:

Create a dedicated working group to propose potential funding approaches across communities

Identify possible future LVC activities that would use LVC capabilities across the test and training communities

Compare pros and cons of different funding approaches considering both historical events and possible future LVC activities

## 5. Investment Process for Upgrading LVC Capabilities Across Test & Training

### Issue:

The business model between the test and training communities differ

### Need:

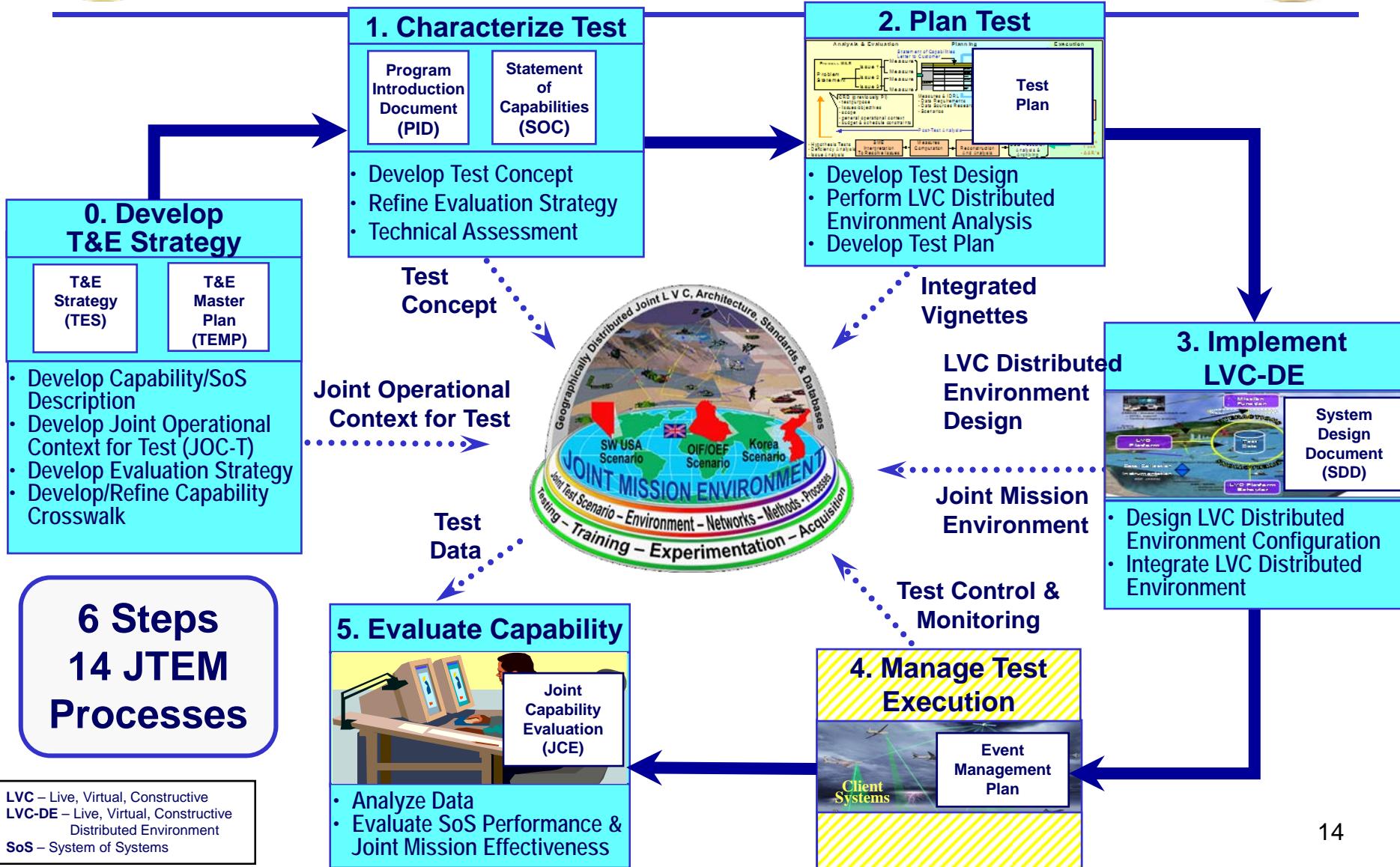
A well-defined process to validate test infrastructure requirements and training infrastructure requirements to enable common solutions to be developed that are viable to both communities

### Suggested Approach:

Create an MOA between TRMC and JFCOM J7 to lead aligning the investment processes in both communities



# Joint Mission Environments Must Be Assembled and Validated, with Processes in Place: The Joint Test & Evaluation Capability Test Methodology (JTEM)





# The Next Focus for LVC

*Shift the Focus from the Infrastructure Solutions  
to the Realism of the LVC Environment*

- **V&V of the LVC integrations**
  - Terrain correlation between simulations & live crucially affects a “fair fight”
  - Semi-Automated Forces (SAF) ability to interpret live C4I messages properly
  - Sensible SAF behavior based on real threats to challenge Live and another simulated players
  - Information Operations, Cyber-Warfare, and other emerging warfighting capabilities into LVC events
  - Federated simulations to replicate Joint Mission Threads



# Wrapping Up: New Thoughts vs. Old Thoughts



The complex relationships that define our international community and the courses of action chosen to address critical issues create many challenges.

The “system-of-systems” must exist as a coherent picture to inform our joint and national leaders as well as the warfighter in theater.

The solution requires an enterprise approach, building tools with broad applications, and realizing that “M&S” is diffuse throughout this enterprise.

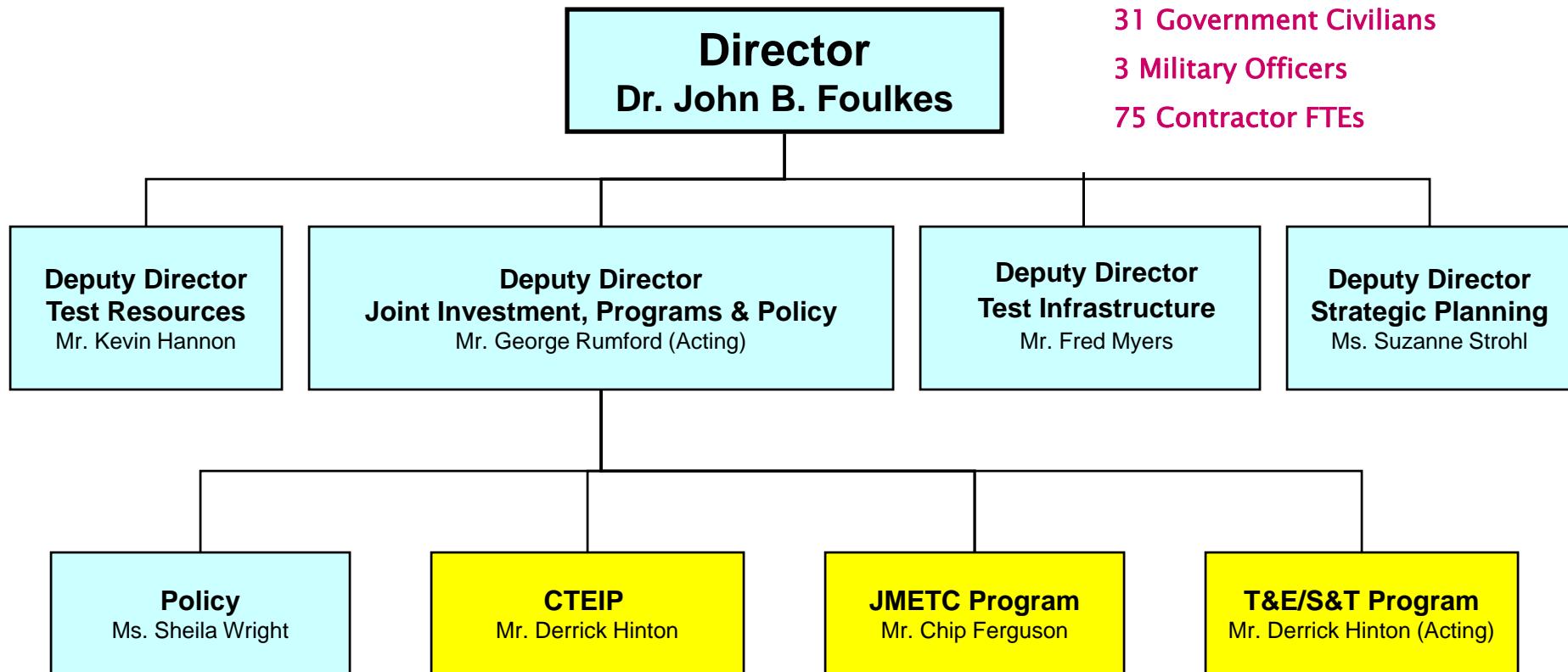
**Last Year's  
Message**

## *This Year's Message*

- Shift the Focus from the Infrastructure Solutions to the Realism of the LVC Environment.
- Future investments in our LVC test infrastructure have to be made in a corporate manner, with the Enterprise in mind.



# Test Resource Management Center Today



## Additional Mission Areas:

- MRTFB Oversight: DoDD 3200.11 Published December 27, 2007
- JMECT: PDM II (PB07)